

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

***I. Interview Summary***

Applicants thank Examiner Sayadian for the courtesy extended during the telephone interview with Applicants' representative Feng Ma (Reg. No. 58,192) on April 1, 2011, and again on April 5, 2011 with Applicants' representative and the inventor.

During the two interviews, the Applicants proposed claim amendments and presented further arguments for the patentability of the claims as amended, and the Examiner suggested possible further claim amendments and stated his position in the rejections.

In addition, the Examiner suggested that the Applicants submit a supplemental Amendment. Although during the first interview on April 1, 2011 the Examiner stated that the supplemental Amendment should include only claim amendments, during the second interview on April 5, 2011, the Examiner stated that the Applicants should present "claim amendments and arguments" in the supplemental Amendment.

No agreement was reached during the interviews.

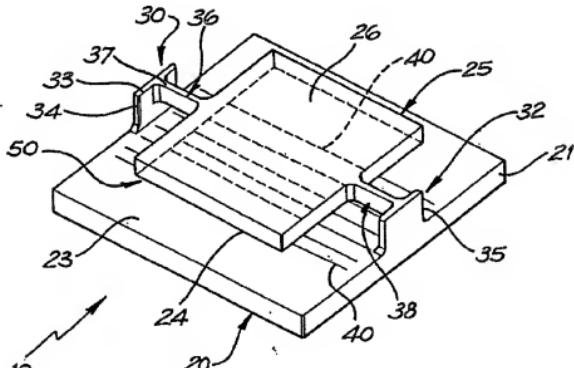
***II. Status of the Claims***

Claims 10, 12-17, 19, 20, 22-27 and 29-33 are pending in this application. By way of this Supplemental Amendment, Claims 10, 14, 15, 20, 23, and 33 have been amended for clarification purposes. These amendments are made with respect to the claims already entered in the RCE filed March 28, 2011. Support for the amendments can be found in the currently-pending claims, and throughout the Specification, for example, in paragraph [0009], and in Fig. 1 and its associated text of the published application (Pub. No. 2006/0285789). No new matter is added.

**III. AAPA Does Not Supply a Hinge, and the Office Action Has Failed to Establish a Prima Facie Case of Obviousness**

Independent Claim 10 in its currently-amended form recites, among other elements, that “the at least one pair of solid state hinges are configured to permit a motion of the second substrate in a direction substantially parallel to the surface of the first substrate but substantially prohibit a motion of the second substrate in a direction perpendicular to the surface of the first substrate,” that “the pair of solid state hinges are substantially aligned to each other in their elongated direction and are opposing to each other from different sides of the second substrate,” and that “the pair of solid state hinges are integral with and linking the first and second substrates to relatively locate the first and second substrates such that the surfaces thereof are parallel and a gap therebetween is maintained at about 15 nm or less such that....” (Emphasis added.) Independent Claims 20 and 33, though different in scopes, recite similar or related elements.

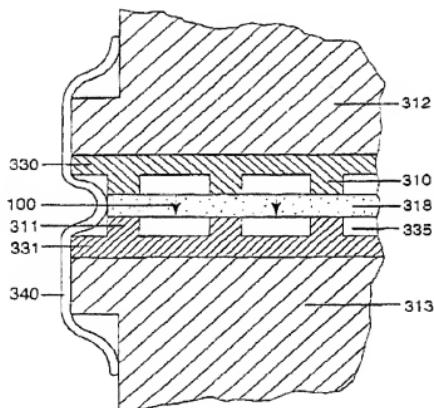
As one illustrative example of the claimed embodiments, Fig. 1 of the present application is reproduced below.



**FIG. 1**

During the telephone interviews, the Examiner conceded that the majority of the references cited in the previous Office Actions fail to supply the pair of solid state hinges as claimed. As a result, the discussions during the interviews and the following arguments have focused on WO/2004094956 ("Michalewicz-1") or its U.S. equivalent Pat. No. 6,707,308 ("Michalewicz-2," referred to as "AAPA" in the Office Actions) in view of U.S. Patent No. 5,461,916 ("Fujii").

The Examiner asserted that the thermoshrink wrap (340) as disclosed in "AAPA" (see, e.g., FIG. 6; reproduced below) is equivalent to a "hinge." To support this assertion, the Examiner reads the definitions of a "hinge" from the Merriam-Webster online dictionary, "a jointed or flexible device on which a door, lid, or other swinging part turns," or "a flexible ligamentous joint." Accordingly, the Examiner concluded that the thermoshrink wrap (340) in "AAPA" is equivalent to a "hinge," and thus the "AAPA" provides sufficient motivation to replace the thermoshrink wrap (340) of "AAPA" with a solid state hinge as supplied by Fujii.



**FIGURE 6**

The Examiner further reads col. 5, lines 2-4 of AAPA, “... [t]he two arrays may be separated as before by a cyclohexane or other suitable organic lubricant film 318 maintained by an outer thermoshrink wrap 340,” and asserted that “AAPA” thus teaches that the thermoshrink wrap 340 provides mechanical support between the two substrates 312, 313, and thus the thermoshrink wrap 340 can be considered as a hinge.

The Applicants respectfully disagree. Specifically:

(1) It appears that the Examiner has relied upon knowledge of the Applicants’ disclosure to infer that “AAPA” teaches a “hinge.” Applicants respectfully submit that, (A) “AAPA” is silent with respect to a “hinge;” and (B) as required by MPEP, knowledge of Applicants’ disclosure must be put aside in reaching the determination whether the claimed invention “as a whole” would have been obvious at the time when the invention was unknown and just before it was made, and the Examiner must step backward into the shoes worn by the hypothetical “person of ordinary skill in the art.” See, e.g., MPEP 2142.

(2) Although during examination of the present application the claims are given their “plain meanings,” “AAPA” is an issued patent and *is silent with respect to a hinge*, and the thermoshrink wrap 340 disclosed therein should be interpreted in light of its specification (*i.e.*, not a hinge) rather than based on hindsight based on the Applicants’ present application. Such an impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art only. *See, e.g.*, MPEP 2142.

Further, the language in “AAPA,” “... [t]he two arrays may be separated as before by a cyclohexane or other suitable organic lubricant film 318 maintained by an outer thermoshrink wrap 340,” appears to have been incorrectly interpreted by the Examiner during the interviews and in the Office Actions as that the wrap 340 “maintains” the gap or separation between the two substrates. Rather, the gap or separation between the substrates in FIG. 6 of “AAPA” is maintained by a cyclohexane or other suitable organic lubricant film 318.

(3) Even under its plain meaning, the thermoshrink wrap 340 of “AAPA” is *not* “a jointed or flexible device on which a door, lid, or other *swinging* part turns,” and is *not* a

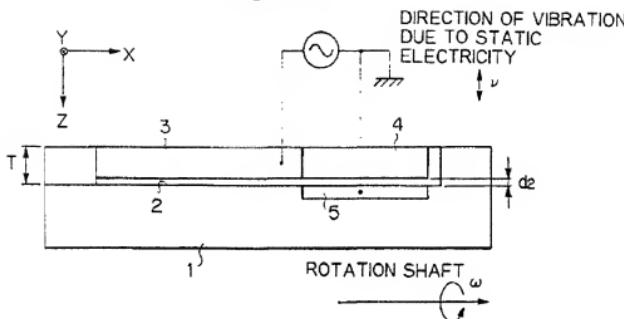
ligamentous *joint*, and is far from being a “hinge.” Rather, as well known in the art, a thermoshrink wrap is quite soft, and *cannot* provide a mechanical support between the two substrates “**to relatively locate** the first and second substrates **such that** the surfaces thereof are parallel and **a gap therebetween is maintained**,” as do the claimed pair of solid state hinges.

The Office Action’s incorrect interpretation of “AAPA” is clearly demonstrated in the final Office Action, where it is asserted that “*a hinge is art recognized equivalent to the wrap* used in “AAPA” for the purpose of maintaining the position of two opposing substrates,” and that “it would have been obvious ... to have modified the “AAPA” to elastically hold the top substrate and its conductors with respect to the lower substrate and its conductors by replacing the wrap 340 at each end with a hinge at each end, *because a hinge is both suitable to hold substrates at a given distance and its function is equivalent to the wrap’s holding function....*

(4) Assuming *arguendo* the Examiner could replace the thermoshrink wrap 340 of “AAPA” with a solid state hinge as supplied by Fujii (Applicants respectfully submit that there is no motivation to do so, as the wrap 340 together with the film 318 clearly are not a “hinge” by all means), “AAPA” *must* be modified to replace the wrap 340 and the cyclohexane or other suitable organic lubricant film 318 *altogether* with the cantilever beam 3 of Fujii (see, e.g., Fig. 2, reproduced below).

However, the cantilever beam 3 of Fujii cannot be taken out of its context. Rather, if the cantilever beam 3 of Fujii were relied upon by the Examiner to replace the wrap 340 and the film 318 of AAPA, it must carry its other structural limitation and its functionality with it. That is, the cantilever beam 3 of Fujii is *required* to have a *free end and a vertical motion*.

Fig. 2



Thus, modifying “AAPA” based on the teachings of Fujii would result the system of “AAPA” being modified to have the upper substrate suspended with a single beam thereby having a free end and a vertical vibration, making the system of “AAPA” unsatisfactory for its intended purpose. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Thus, there is no reason, motivation, or suggestion to modify “AAPA” based on the teachings of Fujii to arrive at the claimed embodiments.

(5) Even if “AAPA” were combined with the teachings of Fujii, there is still a missing element of a “pair” of solid state hinges as claimed. To arrive at the claimed embodiments, before combining it with “AAPA,” the Examiner *must* have modified the teachings of Fujii, to supply a *pair* of opposing beams instead of a single, free-ended beam 4. Thus, there is a clear error in the rejection set forth in the final Office Action mailed on January 5, 2011, wherein on page 7, in the “Response to Arguments,” the Examiner asserted that the “non-AAPA prior art modifies the AAPA; it needs not be modified.”

As a result of modifying Fujii to replace the single beam 4 having a free end with a pair of opposing hinges without free ends, the system of Fujii being modified becomes

inoperable or otherwise unsatisfactory for its intended purpose, because Fujii requires the free end and the vertical vibration for the system to function (see, e.g., Fig. 2 of Fujii above and its associated text).

In view of the above, the cited references, even if combined, fail to disclose, teach, or suggest all of the elements recited in amended independent Claims 10, 20, and 33. In addition, there is no reason, motivation or suggestion to combine these references, and there are clear errors in the rejections set forth in the Office Actions.

***IV. Conclusion***

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith,

Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date April 11, 2011

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